

Appln. No. 09/160,604  
Amendment dated September 23, 2004  
Reply to Office Action of July 7, 2004

REMARKS/ARGUMENTS

Reconsideration of the present application, as amended, is respectfully requested.

The July 7, 2004 Office Action and the Examiner's comments have been carefully considered. In response, remarks are set forth below in a sincere effort to point out patentable features of the present claimed invention.

PRIOR ART REJECTIONS

In the Office Action, claims 1 and 16 are rejected under 35 USC 103 as being anticipated by USP 5,563,658 (Parulski et al.) in view of USP 6,088,060 (Suda et al.). Claims 18 and 19 are rejected under 35 USC 103 as being unpatentable over Parulski et al. in view of Suda et al., and further in view of USP 5,694,168 (Toji).

The present claimed invention as defined by amended claim 1 is directed to an auto-focusing apparatus including an image pickup section, a focusing section, an operation section and a control section for preferentially selecting the high speed mode depending on the an image signal from the predetermined portion of the imaging plane, first after a start of the release option, and for selecting the ordinary mode depending on an image section

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from the entirety of the imaging plane, when the control section determines to fail to allow the focusing in the high speed mode.

As stated above, in rejecting claim 1 the Examiner relies on Parulski et al. in view of Suda et al.

Claim 1 is patentable over the cited references in that the claimed invention requires a control section for preferentially selecting the high speed mode depending on an image signal from the predetermined portion of the imaging plane, first after a start of the release operation and for selecting the ordinary mode depending on a image signal from the entirety of the imaging plane, when the control section determines to fail to allow the focusing in the high speed mode.

Parulski et al. (see column 4, line 65 - column 5, line 18) disclose performing a focus operation using data of a small area in a center region of an image. As described at column 4, line 67 through column 5, line 2, "Only a small number of lines in a center region 66 of the image are used to provide the focus determination input data."

Parulski et al. (see column 5, lines 19-27) also disclose that if a normal operating mode is used to focus an image using a full frame, the focusing process will be "unacceptably long."

Parulski et al. (see column 5, lines 28-57) teach the operation of a focus determination circuit. It is disclosed that

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focusing is performed based on an average contrast value which is obtained by computing the difference between a signal delaying an A/D output signal and a signal failing to delay an A/D output signal.

Parulski et al. (see column 5, line 58 - column 6, line 23) also teach an operating sequence of a camera. It is taught that when a user presses a still capture button, an image is rapidly discarded, and the average contrast of a small region in the center region of an image is computed numerous times as the lens focus is adjusted until it provides the maximum average contrast.

As mentioned above, Parulski et al. disclose performing focusing based on a signal only in the center region of an image. Regarding the method for performing focusing based on the entire image, Parulski et al. teach the disadvantages of this approach (see column 5, lines 19-28), that is, that "using the normal readout mode might take over 8 seconds to properly focus the lens."

In the Office Action the Examiner states that Parulski et al. teach that the focusing section preferentially operates in a high speed mode first depending on an image signal from the predetermined portion of the imaging plain. Parulski et al. do not suggest two focusing modes and a control section for effectuating both the ordinary mode of focusing and the high

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speed mode of focusing. Parulski et al. instead teach the operation of an image sensor 20 in a "fast flash" mode to focus a lens, and then switching the image sensor to a normal readout mode to obtain the final still image (see column 6, lines 24-42 and the Abstract).

As recognized by the Examiner, Parulski et al. do not disclose, teach or suggest the subject matter of claim 1 including "A control section for preferentially selecting the high speed mode depending on an image signal from the predetermined portion of the imaging plane, first after a start of the release operation, and for selecting the ordinary mode depending on an image signal from the entirety of the imaging plane, when the control section determines to fail to allow the focusing in the high speed mode."

In order to bridge the gap between Parulski et al. and the invention defined by claim 1, the Examiner cites Suda et al. Suda et al. teach that the size of a focus detecting area is determined based on a predetermined computing result, and focusing is performed based on a signal of the focus detecting area of the determined size. Suda et al. therefore require a step for computing the size of the focus detecting area. As a result, Suda et al.'s method will take a long time (release time lag) from the release operation of the camera to the print of the

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actual exposure. This is a major problem in a digital still camera in which snapshot performance is required. Suda et al. disclose a video camera which does not include a still video image function, and do not disclose a series of operations from the start of the release operation to the actual exposure. Suda et al. teach determining which of a plurality of focus detecting areas (for example A-E as shown in Fig. 3) are to be selected based on the gate that has the largest difference value between the outside and the inside luminance values. Thus, the problem of slow focusing was not acknowledged and addressed in Suda et al.

In the present invention, first an ordinary mode is executed, and if the ordinary mode does not provide an expected focusing result, a second mode is executed. Thus, the present invention can carry out a high speed process without unnecessary computing. That is, the present invention has the advantage of performing focusing in the high speed mode in many cases, and even if focusing cannot be performed in the high speed mode, it can be performed in the ordinary mode.

As mentioned above, the technical concepts and problems to be solved in Parulski et al. and Suda et al. are completely different from the present claimed invention. The structures to solve the problem addressed in the present invention are

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completely patentably distinct when a comparison is made between the cited art and the claimed invention.

Since the references, even when taken in combination, do not disclose, teach or suggest all of the limitations recited in claim 16, it would not have been obvious to one of ordinary skill in the art to combine the references as suggested by the Examiner to arrive at the invention recited in claim 1.

In view of the foregoing, claim 1 is patentable over Parulski et al. and Suda et al. when taken either alone under 35 USC 102 or in combination under 35 USC 103.

Claims 16, 18 and 19 are dependent on claim 1 and are patentable over the cited references in view of their dependence on claim 1 and because the references do not disclose, teach or suggest each of the limitations set forth in claims 16, 18 and 19.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

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If the Examiner disagrees with any of the foregoing, the Examiner is respectfully requested to point out where there is support for a contrary view.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

  
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